Arizona's Instrument to Measure Standards (AIMS)

Student Guide Grade 7



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Assessment Section 602-542-5031

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Table of Contents

Section	page
AIMS FAQ Sheet	4
Reading	6
Writing	10
Mathematics	23
Scoring Keys	32
6-Trait Writing Rubric	33
Mathematics Reference Sheet	39
General Test Taking Hints	40
Note Page	41

Questions About AIMS

What is AIMS?

Arizona's Instrument to Measure Standards (AIMS) is an assessment program that measures your achievement of the Arizona Academic Standards adopted by the state Board of Education in three subject areas: Reading, Writing, and Mathematics.

Who has to take AIMS?

All students in grades 3 - 8 and high school are required to participate in AIMS testing.

What will be tested on AIMS?

Test items were written to measure specifically the Standards, Concepts, and Performance Objectives described in the Arizona Academic Standards (Articulated by Grade Level for Reading and Mathematics), which were approved by the state Board of Education in March 2003. There will be an Extended Writing Prompt that students will use to actively engage in the writing process. Your writing will be scored using the Six TraitTM Model Rubric. There will be no multiple-choice questions on the writing test.

How can I use this guide to prepare for AIMS?

This guide is divided into the three subject areas assessed on AIMS. It gives a short explanation of each testing format, hints for test taking, sample test questions, and a scoring guide for written responses. It will NOT teach you what you should know and be able to do to score well on the tests, but it will help you become familiar with the tests.

How can I prepare for AIMS?

- Attend school regularly.
- Become familiar with the Arizona Academic Standards documents so that you understand exactly what you are expected to know and be able to do.
- Ask questions.
- Take charge of your own learning! Monitor your progress. Self-assess what you know, what you can do well, and where you need to improve.
- Actively participate in class.
- Have a scheduled time and place to study and do homework.

Types of Items

MULTIPLE-CHOICE

Multiple-choice items will require you to select the BEST response from four possible answer choices and indicate your choice by bubbling in the corresponding letter on an answer sheet. Although some responses will require a recall of facts, or the computation of a correct answer, <u>many of the items will require higher-level</u> thinking and processing. Each multiple-choice item is scored correct (1 point), or incorrect (0 points).

EXTENDED WRITING RESPONSE

The extended response item will ask you to respond to a prompt, which might include writing a letter, an essay, or a narrative. These responses will require a well-developed and well-organized presentation of ideas that follow a particular format suitable to the purpose and audience. You will be expected to develop your written response by following the steps in the writing process: prewriting, drafting, revising, editing, and producing a final copy. You will be provided with a revision checklist to guide your work. Your finished copy, not your prewriting or rough draft, will be scored using a six-point rubric that scores each trait or characteristic of effective writing. The rubric for this type of item is provided at the end of this guide.

READING

Reading is fundamental to all learning and supports us as lifelong learners. It can open our minds to people, places, and ideas beyond our own experiences. It gives us the knowledge we need to make informed choices as responsible citizens in a democratic society. One needs only to browse the Internet to realize how much information is available to us at our fingertips. Understanding what we read, using the wealth of information available to us, and thinking critically about what we read, are crucial skills to function successfully in today's world

ABOUT THE TEST

On AIMS, you will be given several passages to read, both fiction and nonfiction. You may also be given informational text to read; for example, labels and pages from manuals. The questions will measure your ability to understand, interpret, and analyze what you have read. There are approximately 60 multiple-choice Reading items and approximately 20 Language Arts items on the Reading test, which should be completed in 1-2 hours. One sample passage is provided in this guide followed by a set of questions. Reading this passage and answering the questions may help you prepare for the test. An answer key for the Reading questions is included in this guide.

HINTS FOR TAKING AIMS – READING

- You will be asked to read different types of fiction and nonfiction, so adjust your reading to your purpose. Read each passage and the accompanying questions carefully.
- In the multiple-choice questions, choose the **best** response to the question. Read **all** answers before making your selection.
- Think about each question before you respond.
- Manage your time so that you won't feel rushed answering questions that require more thought. Again, this is not a timed test, but you do want to use your time well.
- Answer all items.

Oakview Community Center Origami Classes

Hurry! Classes fill quickly. Registration ends May 21. Be the FIRST in your school to learn this fascinating craft.

Select from the following classes:

Ceremonial Origami -

Begins Monday, June 1 Make your next party a real HIT! Decorate with colorful paper folded boats and fish. You'll learn how to make these decorations and many more.

Performance Origami -

Begins Wednesday, June 3 Entertain family and friends. You'll learn stories to tell while creating an origami shape. For example, you'll fold paper into a graceful pine tree while telling the story of "Little Pine Grows Up."

Play Origami -

Begins Friday, June 5 Be the babysitter that youngsters ask their parents to call. You'll learn to fold paper into frogs that can be made to jump, and other fun toys.

All classes are 6 weeks long. Each class costs \$20.00 plus a materials fee of \$10.00. See the Activity Director at the Center to register, or for more information.

Members of the student council say that this is the best class they have ever taken!

to inform A В to describe C to persuade D to entertain 2. According to the author, how can the reader entertain family and friends with origami? learn how to fold paper into frogs A learn to tell stories while folding the shapes B learn about the story, "Little Pine Grows Up" C D learn how to decorate with colorful paper shapes 3. Which of these has the same meaning for <u>ceremonial</u> as used in the passage? done for young people A done to have fun B \mathbf{C} done to amuse others D done for special occasions **4.** Read this sentence from the passage. Be the FIRST in your school to learn this fascinating craft. Why does the author use all capital letters in the word FIRST? To persuade the reader to take a class. A To express an abbreviation of a group name. В To show the title of a passage. C To indicate the first step of directions. D

1. What is the author's purpose for writing this advertisement?

5. Read this statement from the passage.

Members of the student council say that this is the best class they have ever taken.

What was the author's purpose for including this statement?

- **A** to express the author's belief about origami
- **B** to encourage the reader to join student council
- **C** to provide facts to describe the class
- **D** to get the reader to go along with the others
- **6.** Which of these is **not** included in this passage?
- **A** the cost to take the classes
- **B** a description of each class
- C the time of day each class begins
- **D** where to go to register for the classes
- 7. Which of the following was **not** suggested in this passage?
- **A** to teach the origami classes
- **B** to host a fun origami party
- C to entertain family with origami
- **D** to use origami to be the best babysitter
- **8.** Which of these statements is an opinion?
- **A** All classes last 6 weeks.
- **B** Registration ends May 21.
- C Ceremonial Origami classes begin Monday, June 1st.
- **D** Make your next party a real hit.

Writing

Writing is a critical skill for effective communication. Whether you are writing an e-mail message, a personal letter, an ad for your business, or a formal report for school or work, being able to express your ideas clearly to your audience is important. Becoming a good writer it not easy. It takes effort and the development of a variety of skills: clear ideas, organization, a voice that holds the interest of your audience, and a consistent control of language, including word choice, sentence structure, and conventions (spelling, grammar, punctuation and capitalization). With new technology, it is possible to electronically communicate in writing with people all over the world in a matter of minutes. Writing will continue to be a communication skill that is required in most professions and workplace environments. Acquiring effective written communication skills will enhance both your personal and professional opportunities.

ABOUT THE TEST

You will be expected to write one extended writing piece on a specific topic. This writing test will be completed in one session, so all steps in the writing process, including revising and editing, and a final copy, will be done in that one session. The test should take approximately 2-3 hours to complete. There is an example of a writing prompt, followed by scored student responses to the prompt.

Hints for taking AIMS – Writing

Prior to the test

- Read the three sample student responses to the prompt on the following pages. Note strengths and weaknesses in the paper as you read. Does the writer accomplish the task? Is the writer's message clear? Are the ideas supported with convincing evidence and support? Are the ideas organized so that you can logically follow them? Is the voice appropriate? Did the writer carefully choose words that are clear and convincing? Do the sentences have a natural flow? Is the paper carefully edited?
- Discuss with other students and your teacher why one paper is stronger or more convincing than another.
- Practice writing a persuasive response to this sample prompt. Score your own paper using the rubric to
 determine what your strengths are, and then work on areas you need to improve to be a more effective
 writer.

During the test

- Listen to directions and read the prompt carefully and be sure you understand the purpose before beginning to write.
- Take time to organize your thoughts before you begin to write. For the extended writing prompt, you
 may want to create a graphic organizer (outline, web, chart, map, cluster, etc.) to plan and organize your
 ideas.
- Take advantage of the opportunity to revise your work using the checklist provided. Keep in mind the six traits (characteristics) of effective writing.
- Edit your writing carefully. Your audience (the reader) needs to be able to understand the ideas you are expressing without being hindered by spelling, punctuation, capitalization, and grammar mistakes that interfere with the message. You must be sure your handwriting is legible. Printing your work is acceptable; however, be sure to distinguish between upper- and lower-case letters. Do NOT print in all capital letters.

Keep in mind...

- You will be given two pages in the test booklet to write your final copy. It is important that you take advantage of the two pages you are given to develop your ideas fully. This is your opportunity to demonstrate how well you can write.
- Your final copy needs to be handwritten (not done on a computer).
- You may use a dictionary or thesaurus as a reference during the Extended Writing Response portion of the test.
- Be conscious of the traits, or characteristics, of effective writing (idea development, organization, voice, word choice, sentence fluency, and conventions) no matter what kind of writing you are asked to do.
 The same scoring guide, or rubric, will be used for all the types of writing you may be asked to compose: narrative, persuasive, expository, or formal communication.

The following four examples illustrate the scoring performed for the AIMS DPA.

The first example is scored as "Falls Far Below".

The second example is scored as "Approaches".

The third example is scored as "Meets".

The fourth example is scored as "Exceeds".

Sample Prompt

Sample writing task:
Going to the movies is a major source of entertainment for many students. Imagine that the only discount movie theater in your area is closing.
Write a persuasive essay in support of keeping the discount movie theater open.
This is the writer's checklist you will see on the 7 th Grade AIMS writing test. Practice using it when writing to revise your rough draft before writing your final copy. If you take the time to use it carefully, it will help you write a better paper.
WRITER'S CHECKLIST
☐ My paper has a specific audience and a specific purpose.
☐ My paper contains a strong controlling idea.
☐ My paper stays on topic.
☐ My paper includes specific and relevant details, reasons and examples.
☐ My paper has an effective beginning, middle, and end.
☐ My paper progresses in a logical order, and my ideas flow smoothly.
☐ My paper contains words that make it interesting.
☐ My paper contains sentences that are clear and varied in structure.
☐ My paper includes effective use of paragraphing.

 $\ \square$ My paper includes correct grammar/usage, punctuation, capitalization, and spelling.

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SCORE SHEET FOR WRITING SAMPLE 1

PROMPT:

Going to the movies is a major source of entertainment for many students. Imagine that the only discount movie theater in your area is closing.

Write a persuasive essay in support of keeping the discount movie theater open.

Paper FALLS FAR BELOW standard

Ideas & Content

6 5 4 3 2 (1)

Word Choice

6 5 4 3 2 (1)

Organization

6 5 4 3 (2) 1

Sentence Fluency

65432(1)

Voice

6 5 4 3 (2) 1

Conventions

6 5 4 (3) 2 1

NOTE 1: The underlined passages are taken from the Official Scoring Guide for AIMS Writing (Six Trait Rubric).

NOTE 2: Papers are original samples of Arizona student writing. Identifying information has been removed.

Ideas and Content: The writing lacks a central idea. The writer offers too few details to clearly develop the idea and purpose. The paper is too short to demonstrate the development of an idea. In addition, the writer repeats the idea of cost several times. **Score point is 1.**

Organization: The organization lacks a clear organizational structure. The paper has a missing or extremely undeveloped beginning, body, and ending. The piece is too short to demonstrate organizational structure. **Score point is 2.**

Voice: The writing provides little sense of involvement or commitment. There is little or no hint of the writer behind the words. The last sentence shows a hint of conviction, but it is too little, too late. **Score point is 2.**

Word Choice: <u>The writing shows an extremely limited vocabulary.</u> Word choice is <u>general and vague</u>. The writer does not choose words to persuade. **Score point is 1.**

Sentence Fluency: The writing tends to be choppy. The simplistic sentences do not flow and are not inviting to read. **Score point is 1.**

Conventions: The writer demonstrates limited control of standard writing conventions. The brief text does not show any control over conventions beyond elementary level. The text is too simple to reveal mastery. Score point is 3.

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	The Discount Movie Theater is Closing	
<u> </u>	must Do something to stop this from happening, w	e hav
+	o bring in more buisness in to the D.M.T. or it will	Closi
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ne	w move for thid sound price of \$3.99 so if you war	,++0
Sayı	our movie theater from closing we must take imid a	1.
	ion so when you get homefrom school invite your friends	
	make posters and burner and put them up around town	
	near by towns. Put them on people's windshields, up or	
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	peoples mailboxes and in niwspaper racks and any when	
	think people might secit, try to attract as much a	
to	the movie theater and invite your family and get any	<i>प</i> न र
	i wiry one to come to the movie theater on friday, t	
	for it closes, and hopefully we will raise enough	
to	Keep the movie theater in business so we can watch t	he
	wils we mant to see. So please help out and go	
	1 movies on friday to keep the dicount movie -	
	ive and in byiseness . Thank You i	1 1 1 <u>.</u>
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SCORE SHEET FOR WRITING SAMPLE 2

PROMPT:

Going to the movies is a major source of entertainment for many students. Imagine that the only discount movie theater in your area is closing.

Write a persuasive essay in support of keeping the discount movie theater open.

Paper APPROACHES standard

Ideas & Content

6 5 4 3 2 1

Word Choice

6 5 4 3 2 1

Organization

6 5 4 (3) 2 1

Sentence Fluency

6 5 4 3 2 1

Voice

6 5 4 3 2 1

Conventions

6 5 4 3 2 1

NOTE 1: The underlined passages are taken from the Official Scoring Guide for AIMS Writing (Six Trait Rubric).

NOTE 2: Papers are original samples of Arizona student writing. Identifying information has been removed.

Ideas and Content: The reader can understand the main ideas. The writer tends to offer <u>developmental details that are often limited</u>, <u>uneven</u>, and <u>overly general</u>. <u>Details are not well-grounded in credible sources</u>. The writer offers many examples of strategies to keep the theater open, but they have no specificity. **Score point is 3.**

Organization: An attempt has been made to organize the writing. There is a beginning and an ending which, although present, are undeveloped and too obvious. The use of "so" as a transitional device is overdone. **Score point is 3.**

Voice: A sense of the writer emerges at times; however the voice in inappropriately personal. The writer has a <u>limited sense of audience</u>. There is a tone of persuasion ("We must do something..."); however, it is not clearly presented. **Score point is 3.**

Word Choice: <u>Language is quite ordinary, lacking interest, precision, and variety.</u> The writer uses <u>words that work, but rarely capture the reader's interest.</u> Again, the vocabulary employed is mundane and not specific to the purpose. **Score point is 3.**

Sentence Fluency: Occasional awkward constructions force the reader to slow down. The overlong, awkward sentence that begins the paper ("we must do something...in nearby towns.") does not <u>invite fluid reading.</u> **Score point is 3.**

Conventions: The writer demonstrates limited control of standard writing conventions. Errors begin to impede readability. The paper has one paragraph that would better enhance the message if it were properly segmented. **Score point is 3.**

Writing

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A multitude of people mark at Discourt Flicks, a discount movie theater in a small town called Pintoville. The town governors have just declared to close the theater and replace it with a mini snoppling center. Just think, loads of people will be losing their jobs and many others will not have an inexpensive theater to go to would it be right to go aread and close the theater without consenting the people first?

One main reason people are getting so upset about Discount Flicks closing is because they don't want to lose their jobs. Without a job, what would support their families? Plus there are not many openings for jobs in the small town of Pintoville. Anothermain recent pape don't want Discount Flicks to close is because for many people, this is a main source of entertainment on weekends, or on days off. It is a very inexpensive movie theorem and if it closes, that leaves only one movie theorem, who's prices range high. "Discount Flicks get's my familie's business continuously, along with a number of our friends," says Debran Whick, a teacher at steal Elementary in Pintoville. A majority of Pintoville's residents say they go to Discount Flicks more than any other source of entertainment, and would really have to see it go.

Many town residents want to hold a town meeting with the governors to try and resolve any problems concerning the custing of Discount Flicks. Thirty think that maybe by telling the governors now they feel, they may be able to reason with them and resolve the closing of the theater Many would also be

Page 4

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willing to take matters forther than the town's hards and into the state's. "I don't know now for we'll have to go, but I'm willing to support Discount Flicks all the way to the end," stated Mr. William B., assistant manager of Discount Flicks. 3 However not all of P ville disagrees with the closing of Discount Flicks. Many say the new mini smooping center would be a nice thing to have in such a small town. There also aren't that many leisurely shopping centers in P ville and some residents fully haree with the closing of Discount Flicks. Move reasons have been stated also." In my space time, I never go see a movie, to me they're youst a waste of time. Instead I think going shopping would be more productive," states Sarah B, a town resident In conclusion, the question," would it be right to close Discount Flicks without consenting the people first?" is simpley apparered no, even though some may disagree, majority rules, especially if it's a very large majority. The town governors and residents around hold a meeting and come to an agreement. Because the majority of ville disagrees with the clasing of Discount Flicks, it would only be fair if opposing sides would discuss matters carefully and come to a better conclusion, saving the closing of Discount Flicks.

Page 5





SCORE SHEET FOR WRITING SAMPLE 3

PROMPT:

Going to the movies is a major source of entertainment for many students. Imagine that the only discount movie theater in your area is closing.

Write a persuasive essay in support of keeping the discount movie theater open.

Paper MEETS standard.

Ideas & Content 6 (5) 4 3 2 1

Word Choice 6 5 **4** 3 2 1 Organization

6 5 @ 3 2 1

Sentence Fluency
6 5 4 3 2 1

Voice

6 5 @ 3 2 1

Conventions

654321

NOTE 1: The underlined passages are taken from the Official Scoring Guide for AIMS Writing (Six Trait Rubric).

NOTE 2: Papers are original samples of Arizona student writing. Identifying information has been removed.

Ideas and Content: Main ideas stand out and are developed by supporting details suitable to audience and purpose. The writer's creative <u>use of resources provides strong, credible support.</u> The quotes from concerned citizens are appropriate and supportive. **Score point is 5.**

Organization: Order and structure are present but seem formulaic. The writer attempts to offer both sides of an argument, but this organization weakens the original stance. However, the body is easy to follow with details that fit where placed. **Score point is 4.**

Voice: There is a sense of audience and the writer seems to be aware of the reader. A voice is present. However, at times the writing is inappropriately formal and stiff. "Many would be willing to take matters farther than the town's hands and into the state's." **Score point is 4.**

Word Choice: Words effectively convey the intended message. Attempts at colorful language are occasionally overdone. "A multitude of people..." "the town governors..." "without consenting the people..." Other words are vague and weaken the argument: "many" is overused. **Score point is 4.**

Sentence Fluency: Sentence patterns are varied and contribute to ease in oral reading. The writer has <u>occasional lapses in stylistic control; dialogue sounds natural.</u> Examples of sentences in need of revision for style: "Another main reason people don't want Discount Flicks to close is because for many people, this is the main source of entertainment on weekends, or on days off." And "In conclusion, the questions, "would it be right to close Discount Flicks without consenting the people first?" is simpley answered no, even though some may disagree, majority rules, especially if it's a very large majority." **Score point is 4.**

Conventions: The writing demonstrates control over standard writing conventions. Minor errors do not impede readability. The writer uses sound paragraph breaks that reinforce the organizational structure. **Score point is 4.**

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can get	at your d	Scount movie	theater is as	extremely w	rarm			
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Page 4

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theater is the fact that the equipment there is the most
rellable equiment I have ever seen in any movie theater. I love
knowing that I could always go to your theater and know that
nothing will be broken or out of order
I don't know about you but I love to feel safe when
I go to a movie theater. That's another thing that I love
about your movie theater is the fact that it is the safest
one I have ever gone to. I love to know that no one will start
any trouble their.
Have you ever gone to a movie theater and went into
the bathroom? Did you see gum on the walls and graffiti
every were? You probabally did. That one other reason why
I enjoy your theater so much is because it is so well
maintained-You can walk into the bathroom and be blinded
by the spectacular white shine.
I know you have your reasons for closing the
discount movie theater but it has been ruch a great pelce
of our lives, so please don't close the discount movie
theater.
One of your movie theoriest greatest tan
M P P
W 6

Page 5



SCORE SHEET FOR WRITING SAMPLE 4 PROMPT:

Going to the movies is a major source of entertainment for many students. Imagine that the only discount movie theater in your area is closing.

Write a persuasive essay in support of keeping the discount movie theater open.

Paper EXCEEDS standard

Ideas & Content

(6) 5 4 3 2 1

Word Choice

6 (5) 4 3 2 1

Organization

(6) 5 4 3 2 1

Sentence Fluency

6 5 4 3 2 1

Voice

6 (5) 4 3 2 1

Conventions

6 (5) 4 3 2 1

NOTE 1: The underlined passages are taken from the Official Scoring Guide for AIMS Writing (Six Trait Rubric).

NOTE 2: Papers are original samples of Arizona student writing. Identifying information has been removed.

Ideas and Content: Main ideas stand out and are developed by strong support and rich details suitable to audience and purpose. The writer carefully explores each idea and supports with clarity and strength. "One of the greatest things that anyone can get at your discount theater is an extremely warm welcome." **Score point is 6.**

Organization: The order and structure are compelling and move the reader through the text easily. The paper has a <u>strong</u> beginning and a <u>satisfying sense of closure</u>. The writer provides <u>smooth</u>, <u>effective transitions among all elements</u>. While the writer uses traditional transitions such as "one of the reasons..." and "Another thing...", the subtle, contextual flow of the ideas between paragraphs 4 and 5, and 5 and 6 is well done. **Score point is 6.**

Voice: The writer seems committed to the topic, and there is a sense of "writing to be read." The writing shows originality, liveliness, honesty, conviction, and excitement. However, the writer should be cautious about the tone set in the first paragraph. It appears at first to be more angry than appropriate for audience and purpose. **Score point is 5.**

Word Choice: Words effectively convey the intended message; The writing has some fine moments and avoids clichés. The writer employs attempts at colorful language that are overdone. Words such as "furious" and "ashamed" in paragraph one detract from the effective "extremely warm welcome" in paragraph three and "blinded by spectacular light" in paragraph five. Word choice is close to a five, but **Score point is 4.**

Sentence Fluency: The writing has an easy flow and rhythm; expressive oral reading is easy and enjoyable. The writer uses <u>variation in sentence structure</u>, length, and beginnings that add interest to the text. The rhetorical questions with a short answer are quite effective in paragraph six. **Score point is 5.**

Conventions: The writing demonstrates control of standard writing conventions, and paragraph breaks reinforce the organizational structure. While one or two errors are detected, there is little need for editing. Score point is 5.

MATHEMATICS

Mathematics is used as a means to communicate about quantities, logical relationships, and unknowns. Such a simplistic statement may make students who are not planning to go to college ask why mathematics is necessary for them.

While the ability to do computation is important, it is the skills of problem finding and solving, formalizing, abstract thinking, symbolic representation and interpretation, formulation of logical arguments, and objective reasoning that allow us to function effectively and understand our world.

Mathematics is the one area of coursework in the school curriculum where students are taught these skills, and where answers cannot be obtained just by common sense and guessing. Even without an ever-increasing reliance on technology, mathematical skills meet needs for practical everyday life, intelligent citizenship, and future employment. A study by Arizona State University indicated that students who opt out of advanced levels of mathematics and science may now eliminate up to 75% of career opportunities from which to choose[†]. Algebra has been called the academic passport for passage into virtually every facet of the job market. Employers want their employees to be able to set up problems, estimate solutions, identify how accurate solutions need to be, work with other people to reach goals, know the many different types of mathematics that exist, and determine which one is needed in a particular situation. It is clear that the mathematical literacy of the twentieth century will NOT be sufficient for the twenty-first century.

ABOUT THE TEST

The mathematics test contains approximately 100 multiple-choice questions. Calculators are not allowed; however, the calculations required can be readily handled with pencil and paper. The questions will emphasize conceptual understanding, process, and problem solving skills rather than just computation skills.

Hints for taking AIMS – Mathematics

- Remember, this is not a timed test. Take your time and do your best work.
- Since calculators are not allowed on this test, double-check your work!
- Check to see if your answer is reasonable.

[†]ASU Research, Fall, 1998, p. 41

Sample Questions for Mathematics

What To Expect From This Section

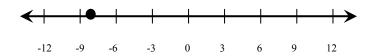
This AIMS Student Guide for Mathematics provides examples of the format and types of questions that will appear on AIMS Mathematics. An attempt has been made to provide a sampling of the types of questions that might be asked; however, not every concept in each strand has a corresponding sample question in this Guide. An answer key for all Mathematics sample questions is provided in the appendices. Additionally, you will find an AIMS Reference Sheet in the appendices. The reference sheet in the actual AIMS Mathematics test will be revised to reflect the formulas and other information that will be included on the test.

Strand 1: Number Sense and Operations

General concepts you should know:

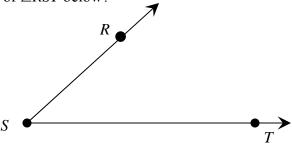
- Real number system and its various subsystems (natural, whole, integers, and rational)
- Operations with integers
- Scientific notation
- Estimation strategies

1. Which of the following best represents the point *P* on the number line below?



- **A.** -10
- **B.** −8
- **C.** 8
- **D.** 10
- **2.** In which set of integers are the numbers ordered from least to greatest?
 - **A.** {8, 5, -2, -3, -7}
 - **B.** {-7, -2, 5, -3, 8}
 - **C.** {-7, -3, -2, 5, 8}
 - **D.** {8, -2, -3, 5, -7}
- **3.** A taxi charges \$2 per trip plus \$0.30 per mile. Melissa took a 32 mile taxi ride to the airport. What should be the total charge for the taxi ride?
 - **A.** \$9.60
 - **B.** \$11.60
 - **C.** \$19.20
 - **D.** \$23.20
- **4.** What is 273.83 written in scientific notation?
 - **A.** 2.7383×10^2
 - **B.** 2.7383×10^3
 - **C.** 27.383×10^2
 - **D.** 27.383×10^3

5. Which of the following is closest to the measure of $\angle RST$ below?



- **A.** 20°
- **B.** 45°
- **C.** 85°
- **D.** 100°

Strand 2: Data Analysis, Probability and Discrete Math

General concepts you should know:

- Graphs (histograms, line graphs, circle graphs, frequency charts, stem-and-leaf plots, and scatter plots)
- Measures of central tendency, variability and correlation (mean, median, mode, and range)
- Pattern prediction
- Probability
- Probable outcomes of events
- Systematic listing and counting; outcomes sets
- Use of combinations vs. permutations

- **6.** Aftyn wants to build a new house. Which of these survey questions would be **least** helpful in deciding where to build the house?
 - **A.** Is the soil in the area firm enough to support a house?
 - **B.** Does the area have a dependable water supply?
 - **C.** Is a source of electricity available in the area?
 - **D.** Are people allowed to have pets in the area?
- 7. The number of customers entering Marcel's jewelry store each hour during the weekend are shown in the graph below.

Number of Customers

Tens	Ones
0	6, 7
1	2, 2, 2, 5, 6, 8, 9
2	1, 1, 3, 5, 8
3	0, 1, 1, 3

Key 1 | 3 means 13

What is the median number of customers during the weekend?

- **A.** 9
- **B.** 12
- **C.** 20
- **D.** 27

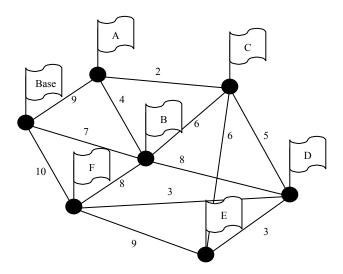
8. Tom and Antwan conducted a probability experiment using different colored marbles of the same size. They entered the results of the experiment in the table below.

Results

Ivan	Red	Blue	Red	Blue	Blue	Green	Blue	Red	Blue	Green
Antwan	Blue	Blue	Red	Green	Green	Red	Blue	Red	Green	Blue

Which of these is a true statement about the results?

- **A.** Both chose three green marbles.
- **B.** Both chose five blue marbles.
- **C.** Both chose three red marbles.
- **D.** Both chose four green marbles.
- **9.** An obstacle course is designed so that the obstacles between each checkpoint have different difficulty ratings. The difficulty rating for each obstacle is marked on each edge of the vertex edge graph below.



Which of the following is the least difficult (lowest total rating points) route for a runner to collect all 6 flags and return to base?

- A. Base, A, B, C, D, E, F, Base
- **B.** Base, A, C, B, D, E, F, Base
- **C.** Base, B, A, C, D, E, F, Base
- **D.** Base, B, A, C, E, D, F, Base

Strand 3: Patterns, Algebra and Functions

General concepts you should know:

- Identifying and extending patterns
- Graphing, evaluating, simplifying, and solving simple linear equations
- The slope of a line and what it represents
- **10.** Which expression describes the rule used in the input/output model below?

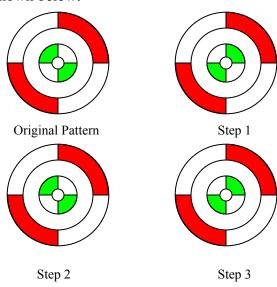
Input (x)	6	12	21	27	33	36
Output (y)	7	9	12	14	16	17

- **A.** $x \div 3 + 5$
- **B.** $x \div 6 + 6$
- **C.** $x \cdot 3 11$
- **D.** $x \cdot 6 29$
- **11.** What is the value of the expression below when x = 3 and y = -5?

$$-3xy + y^2$$

- **A.** -70
- **B.** -20
- **C.** 20
- **D.** 70

12. Sierra drew a pattern using two rings and rearranged it in 3 steps using a specific rule, as shown below.



What is the rule Sierra used to change her pattern?

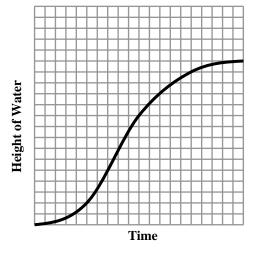
- **A.** Rotate the outer ring.
- **B.** Rotate the inner ring.
- **C.** Rotate the inner ring then rotate the outer ring.
- **D.** Rotate the inner and outer rings together.

13. Jill filled the vase below, from bottom to top, with water at a constant rate.

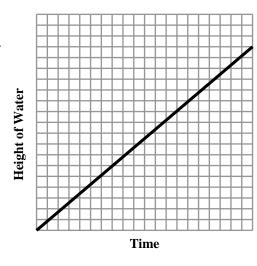


Which of the following best represents the change in the height of the water level as she filled the vase?

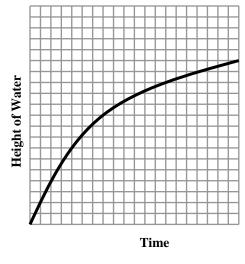
A.



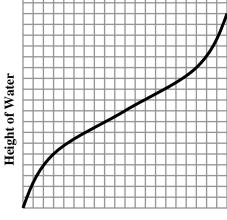
C.



В.



D.

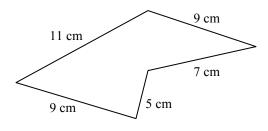


Time

Strand 4: Geometry and Measurement

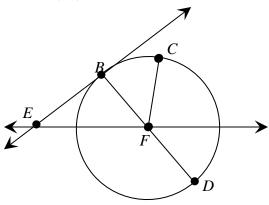
General concepts you should know:

- Geometric relationships (parallelism, perpendicularity, congruency)
- Angle characteristics (complementary, supplementary, and congruent)
- Circle characteristics (arcs, chords and inscribed angles)
- Identification of prisms, pyramids, cones, cylinders, and spheres
- Transformations (reflections, rotations, dilations, translations, and symmetry)
- Appropriate units of measure, applications of techniques and formulas
- Perimeter, area, volume; measuring line segments, lines, angles, 2-D and 3-D figures



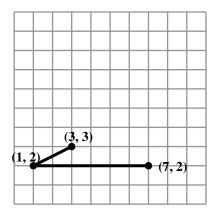
- **14.** What is the perimeter of the figure above?
 - **A.** 40 cm
 - **B.** 41 cm
 - **C.** 99 cm
 - **D.** 108 cm

15. Points B, C, and D lie on circle F.



Which two points are endpoints of a radius of circle F?

- A. B and F
- B. B and D
- C. E and F
- **D.** E and B
- **16.** Three of the vertices of a partially drawn parallelogram are shown in the graph below.

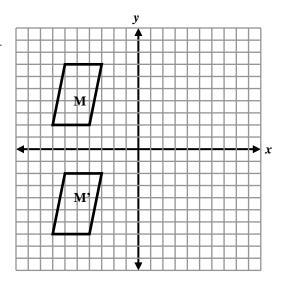


What are the coordinates of the missing vertex?

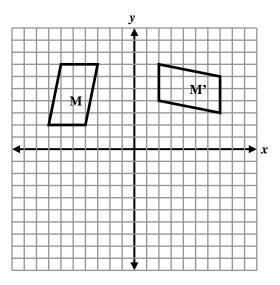
- **A.** (8, 4)
- **B.** (4, 8)
- **C.** (9, 3)
- **D.** (3, 9)

17. Which of the following is a reflection of figure \mathbf{M} over the x-axis to form \mathbf{M} ?

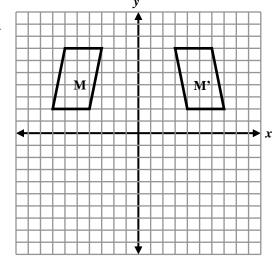
A.



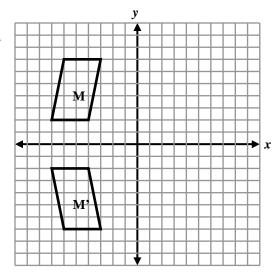
C.



В.



D.



Strand 5: Structure and Logic

General concepts you should know:

- Inductive and deductive reasoning
- Validity of arguments
- **18.** Dena, Bobbi, and Tamayra are in the same class. Their last names are Wilson, Jones, and Malkier, in no particular order. Each has a different amount of money for lunch.
 - Dena has more money than either Bobbi or Wilson
 - Tamayra has more money than Jones, but less than Malkier

What are the full names of the girls in order of the amount of money they have, from least to greatest?

- A. Bobbi Jones, Tamayra Wilson, Dena Malkier
- **B.** Dena Malkier, Tamayra Wilson, Bobbi Jones
- C. Dena Malkier, Tamayra Jones, Bobbi Wilson
- **D.** Bobbi Wilson, Tamayra Jones, Dena Malkier

Scoring Keys

Reading Key

Question #1: C
Question #2: B
Question #3: D
Question #4: A
Question #5: D
Question #6: C
Question #7: A
Question #8: D

Mathematics Key:

Question #1: B Question #2: C Question #3: B Question #4: A Question #5: B Question #6: D Question #7: C Question #8: C Question #9: D Question #10: A Question #11: D Question #12: B Question #13: D Question #14: B Question #15: A Question #16: C Question #17: D Question #18: A

IDEAS and CONTENT

6

The writing is exceptionally clear, focused and interesting. It holds the reader's attention throughout. Main ideas stand out and are developed by strong support and rich details suitable to audience and purpose. The writing is characterized by

- clarity, focus, and control.
- main idea(s) that stand out.
- supporting, relevant, carefully selected details; when appropriate, use of resources provides strong, accurate, credible support
- a thorough, balanced, in-depth explanation/ exploration of the topic; the writing makes connections and shares insights.
- content and selected details that are well suited to audience and purpose.

5

The writing is clear, focused and interesting. It holds the reader's attention. Main ideas stand out and are developed by supporting details suitable to audience and purpose. The writing is characterized by

- clarity, focus, and control.
- main idea(s) that stand out.
- supporting, relevant, carefully selected details; when appropriate, use of resources provides strong, accurate, credible support.
- a thorough, balanced explanation/exploration of the topic; the writing makes connections and shares insights.
- content and selected details that are well-suited to audience and purpose.

4

The writing is clear and focused. The reader can easily understand the main ideas. Support is present, although it may be limited or rather general. The writing is characterized by

- an easily identifiable purpose.
- clear main idea(s)
- supporting details that are relevant, but may be overly general or limited in places; when appropriate, resources are used to provide accurate support.
- a topic that is explored/explained, although developmental details may occasionally be out of balance with the main idea(s); some connections and insights may be present.
- content and selected details that are relevant, but perhaps not consistently well chosen for audience and purpose.

3

The reader can understand the main ideas, although they may be overly broad or simplistic, and the results may not be effective. Supporting detail is often limited, insubstantial, overly general, or occasionally slightly off-topic. The writing is characterized by

- an easily identifiable purpose and main idea(s).
- predictable or overly-obvious main ideas or plot; conclusions or main points seem to echo observations heard elsewhere.
- support that is attempted; but developmental details that are often limited in scope, uneven, somewhat offtopic, predictable, or overly general.
- details that may not be well-grounded in credible resources; they may be based on clichés, stereotypes or questionable sources of information.
- difficulties when moving from general observations to specifics.

2

Main ideas and purpose are somewhat unclear or development is attempted but minimal. The writing is characterized by

- a purpose and main idea(s) that may require extensive inferences by the reader.
- minimal development; insufficient details.
- irrelevant details that clutter the text.
- extensive repetition of detail.

1

The writing lacks a central idea or purpose. The writing is characterized by

- ideas that are extremely limited or simply unclear.
- attempts at development that are minimal or nonexistent; the paper is too short to demonstrate the development of an idea.

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ORGANIZATION

6

The organization enhances the central idea(s) and its development. The order and structure are compelling and move the reader through the text easily. The writing is characterized by

- effective, perhaps creative, sequencing; the organizational structure fits the topic, and the writing is easy to follow.
- a strong, inviting beginning that draws the reader in and a strong satisfying sense of resolution or closure.
- smooth, effective transitions among all elements (sentences, paragraphs, and ideas).
- details that fit where placed.

5

The organization enhances the central idea(s) and its development. The order and structure are strong and move the reader through the text. The writing is characterized by.

- effective sequencing; the organizational structure fits the topic, and the writing is easy to follow.
- an inviting beginning that draws the reader in and a satisfying sense of resolution or closure.
- smooth, effective transitions among all elements (sentences, paragraphs, and ideas).
- details that fit where placed.

4

Organization is clear and coherent. Order and structure are present, but may seem formulaic. The writing is characterized by

- clear sequencing.
- an organization that may be predictable.
- a recognizable, developed beginning that may not be particularly inviting; a developed conclusion that may lack subtlety.
- a body that is easy to follow with details that fit where placed.
- transitions that may be stilted or formulaic.
- organization which helps the reader, despite some weaknesses.

3

An attempt has been made to organize the writing; however, the overall structure is inconsistent or skeletal. The writing is characterized by

- attempts at sequencing, but the order or the relationship among ideas may occasionally be unclear.
- a beginning and an ending which, although present, are either undeveloped or too obvious (e.g. "My topic is...", "These are all the reasons that...")
- transitions that sometimes work. The same few transitional devices (e.g., coordinating conjunctions, numbering, etc.) may be overused.
- a structure that is skeletal or too rigid.
- placement of details that may not always be effective.
- organization which lapses in some places, but helps the reader in others.

2

The writing lacks a clear organizational structure. An occasional organizational device is discernible; however, the writing is either difficult to follow and the reader has to reread substantial portions, or the piece is simply too short to demonstrate organizational skills. The writing is characterized by

- some attempts at sequencing, but the order or the relationship among ideas is frequently unclear.
- a missing or extremely undeveloped beginning, body, and/or ending.
- a lack of transitions, or when present, ineffective or overused.
- a lack of an effective organizational structure.
- details that seem to be randomly placed, leaving the reader frequently confused.

1

The writing lacks coherence; organization seems haphazard and disjointed. Even after rereading, the reader remains confused. The writing is characterized by

- a lack of effective sequencing.
- a failure to provide an identifiable beginning, body and/or ending.
- a lack of transitions.
- pacing that is consistently awkward; the reader feels either mired down in trivia or rushed along too rapidly.
- a lack of organization which ultimately obscures or distorts the main point.

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VOICE

6

The writer has chosen a voice appropriate for the topic, purpose and audience. The writer seems deeply committed to the topic, and there is an exceptional sense of "writing to be read." The writing is expressive, engaging, or sincere. The writing is characterized by

- an effective level of closeness to or distance from the audience (e.g., a narrative should have a strong personal voice, while an expository piece may require extensive use of outside resources and a more academic voice; nevertheless, both should be engaging, lively, or interesting. Technical writing may require greater distance.).
- an exceptionally strong sense of audience; the writer seems to be aware of the reader and of how to communicate the message most effectively. The reader may discern the writer behind the words and feel a sense of interaction.
- a sense that the topic has come to life; when appropriate, the writing may show originality, liveliness, honesty, conviction, excitement, humor, or suspense.

5

The writer has chosen a voice appropriate for the topic, purpose, and audience. The writer seems committed to the topic, and there is a sense of "writing to be read." The writing is expressive, engaging or sincere. The writing is characterized by

- an appropriate level of closeness to or distance from the audience (e.g., a narrative should have a strong personal voice while an expository piece may require extensive use of outside resources and a more academic voice; nevertheless, both should be engaging, lively or interesting. Technical writing may require greater distance.).
- a strong sense of audience; the writer seems to be aware
 of the reader and of how to communicate the message
 most effectively. The reader may discern the writer
 behind the words and feel a sense of interaction.
- a sense that the topic has come to life; when appropriate, the writing may show originality, liveliness, honesty, conviction, excitement, humor, or suspense.

4

A voice is present. The writer demonstrates commitment to the topic, and there may be a sense of "writing to be read." In places, the writing is expressive, engaging, or sincere. The writing is characterized by

- a questionable or inconsistent level of closeness to or distance from the audience.
- a sense of audience; the writer seems to be aware of the reader but has not consistently employed an appropriate voice. The reader may glimpse the writer behind the words and feel a sense of interaction in places.
- liveliness, sincerity, or humor when appropriate; however, at times the writing may be either inappropriately casual or personal, or inappropriately formal and stiff.

3

The writer's commitment to the topic seems inconsistent. A sense of the writer may emerge at times; however, the voice is either inappropriately personal or inappropriately impersonal. The writing is characterized by

- a limited sense of audience; the writer's awareness of the reader is unclear.
- an occasional sense of the writer behind the words; however, the voice may shift or disappear a line or two later and the writing become somewhat mechanical.
- a limited ability to shift to a more objective voice when necessary.

2

The writing provides little sense of involvement or commitment. There is no evidence that the writer has chosen a suitable voice. The writing is characterized by

- little engagement of the writer; the writing tends to be largely flat, lifeless, stiff, or mechanical.
- a voice that is likely to be overly informal and personal.
- a lack of audience awareness; there is little sense of "writing to be read."
- little or no hint of the writer behind the words. There is rarely a sense of interaction between reader and writer.

1

The writing seems to lack a sense of involvement or commitment. The writing is characterized by

- no engagement of the writer; the writing is flat and lifeless.
- a lack of audience awareness; there is no sense of "writing to be read."
- no hint of the writer behind the words. There is no sense of interaction between writer and reader; the writing does not involve or engage the reader.

Arizona Department of Education 35 of 41 November 18, 2005

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WORD CHOICE

6

Words convey the intended message in an exceptionally interesting, precise, and natural way appropriate to audience and purpose. The writer employs a rich, broad range of words, which have been carefully chosen and thoughtfully placed for impact. The writing is characterized by

- accurate, strong, specific words; powerful words energize the writing.
- fresh, original expression; slang, if used, seems purposeful and is effective.
- vocabulary that is striking and varied, but that is natural and not overdone.
- ordinary words used in an unusual way.
- words that evoke strong images; figurative language may be used.

5

Words convey the intended message in an interesting, precise, and natural way appropriate to audience and purpose. The writer employs a broad range of words which have been carefully chosen and thoughtfully placed for impact. The writing is characterized by

- accurate, specific words; word choices energize the writing.
- fresh, vivid expression; slang, if used, seems purposeful and is effective.
- vocabulary that may be striking and varied, but that is natural and not overdone.
- ordinary words used in an unusual way.
- words that evoke clear images; figurative language may be used.

4

Words effectively convey the intended message. The writer employs a variety of words that are functional and appropriate to audience and purpose. The writing is characterized by

- words that work but do not particularly energize the writing.
- expression that is functional; however, slang, if used, does not seem purposeful and is not particularly effective.
- attempts at colorful language that may occasionally seem overdone.
- occasional overuse of technical language or jargon.
- rare experiments with language; however, the writing may have some fine moments and generally avoids clichés.

3

Language is quite ordinary, lacking interest, precision and variety, or may be inappropriate to audience and purpose in places. The writer does not employ a variety of words, producing a sort of "generic" paper filled with familiar words and phrases. The writing is characterized by

- words that work, but that rarely capture the reader's interest.
- expression that seems mundane and general; slang, if used, does not seem purposeful and is not effective.
- attempts at colorful language that seem overdone or forced
- words that are accurate for the most part, although misused words may occasionally appear, technical language or jargon may be overused or inappropriately used.
- reliance on clichés and overused expressions.

2

Language is monotonous and/or misused, detracting from the meaning and impact. The writing is characterized by

- words that are colorless, flat or imprecise.
- monotonous repetition or overwhelming reliance on worn expressions that repeatedly distract from the message.
- images that are fuzzy or absent altogether.

1

The writing shows an extremely limited vocabulary or is so filled with misuses of words that the meaning is obscured. Only the most general kind of message is communicated because of vague or imprecise language. The writing is characterized by

- general, vague words that fail to communicate.
- an extremely limited range of words.
- words that simply do not fit the text; they seem imprecise, inadequate, or just plain wrong.

Arizona Department of Education 36 of 41 November 18, 2005

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SENTENCE FLUENCY

6

The writing has an effective flow and rhythm. Sentences show a high degree of craftsmanship, with consistently strong and varied structure that makes expressive oral reading easy and enjoyable. The writing is characterized by

- a natural, fluent sound; it glides along with one sentence flowing effortlessly into the next.
- extensive variation in sentence structure, length, and beginnings that add interest to the text.
- sentence structure that enhances meaning by drawing attention to key ideas or reinforcing relationships among ideas.
- varied sentence patterns that create an effective combination of power and grace.
- strong control over sentence structure; fragments, if used at all, work well.
- stylistic control; dialogue, if used, sounds natural.

5

The writing has an easy flow and rhythm. Sentences are carefully crafted, with strong and varied structure that makes expressive oral reading easy and enjoyable. The writing is characterized by

- a natural, fluent sound; it glides along with one sentence flowing into the next.
- variation in sentence structure, length, and beginnings that add interest to the text.
- sentence structure that enhances meaning.
- control over sentence structure; fragments, if used at all, work well.
- stylistic control; dialogue, if used sounds natural.

4

The writing flows; however, connections between phrases or sentences may be less than fluid. Sentence patterns are somewhat varied, contributing to ease in oral reading. The writing is characterized by

- a natural sound; the reader can move easily through the piece, although it may lack a certain rhythm and grace.
- some repeated patterns of sentence structure, length, and beginnings that may detract somewhat from overall impact.
- strong control over simple sentence structures, but variable control over more complex sentences; fragments, if present, are usually effective.
- occasional lapses in stylistic control; dialogue, if used, sounds natural for the most part, but may at times sound stilted or unnatural.

3

The writing tends to be mechanical rather than fluid. Occasional awkward constructions may force the reader to slow down or reread. The writing is characterized by

- some passages that invite fluid oral reading; however, others do not.
- some variety in sentences structure, length, and beginnings, although the writer falls into repetitive sentence patterns.
- good control over simple sentence structures, but little control over more complex sentences; fragments, if present, may not be effective.
- sentences which, although functional, lack energy.
- lapses in stylistic control; dialogue, if used, may sound stilted or unnatural.

2

The writing tends to be either choppy or rambling. Awkward constructions often force the reader to slow down or reread. The writing is characterized by

- significant portions of the text that are difficult to follow or read aloud.
- sentence patterns that are monotonous (e.g., subject-verb or subject-verb-object).
- a significant number of awkward, choppy, or rambling constructions.

1

The writing is difficult to follow or to read aloud. Sentences tend to be incomplete, rambling, or very awkward. The writing is characterized by

- text that does not invite—and may not even permit—smooth oral reading.
- confusing word order that is often jarring and irregular.
- sentence structure that frequently obscures meaning.
- sentences that are disjointed, confusing, or rambling.

Arizona Department of Education 37 of 41 November 18, 2005

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CONVENTIONS

6

The writing demonstrates exceptionally strong control of standard writing conventions (e.g., punctuation, spelling, capitalization, paragraph breaks, grammar and usage) and uses them effectively to enhance communication. Errors are so few and so minor that the reader can easily skim right over them unless specifically searching for them. The writing is characterized by

- strong control of conventions; manipulation of conventions may occur for stylistic effect.
- strong, effective use of punctuation that guides the reader through the text.
- correct spelling, even of more difficult words.
- paragraph breaks that reinforce the organizational structure.
- correct grammar and usage that contribute to clarity and style.
- skill in using a wide range of conventions in a sufficiently long and complex piece.
- little or no need for editing.

5

The writing demonstrates strong control of standard writing conventions (e.g., punctuation, spelling, capitalization, paragraph breaks, grammar and usage) and uses them effectively to enhance communication. Errors are so few and so minor that they do not impede readability. The writing is characterized by

- strong control of conventions.
- effective use of punctuation that guides the reader through the text.
- correct spelling, even of more difficult words.
- paragraph breaks that reinforce the organizational structure.
- correct capitalization; errors, if any, are minor.
- correct grammar and usage that contribute to clarity and style.
- skill in using a wide range of conventions in a sufficiently long and complex piece.
- little need for editing.

4

The writing demonstrates control of standard writing conventions (e.g., punctuation, spelling, capitalization, paragraph breaks, grammar and usage). Minor errors, while perhaps noticeable, do not impede readability. The writing is characterized by

- control over conventions used, although a wide range is not demonstrated.
- correct end-of-sentence punctuation, internal punctuation may sometimes be incorrect.
- spelling that is usually correct, especially on common words.
- basically sound paragraph breaks that reinforce the organizational structure.
- correct capitalization; errors, if any, are minor.
- occasional lapses in correct grammar and usage; problems are not severe enough to distort meaning or confuse the reader.
- moderate need for editing.

3

The writing demonstrates limited control of standard writing conventions (e.g., punctuation, spelling, capitalization, paragraph breaks, grammar and usage). Errors begin to impede readability. The writing is characterized by

- some control over basic conventions; the text may be too simple to reveal mastery.
- end-of-sentence punctuation that is usually correct; however, internal punctuation contains frequent errors.
- spelling errors that distract the reader; misspelling of common words occurs.
- paragraphs that sometimes run together or begin at ineffective places.
- capitalization errors.
- errors in grammar and usage that do not block meaning but do distract the reader.
- significant need for editing.

2

The writing demonstrates little control of standard writing conventions. Frequent, significant errors impede readability. The writing is characterized by

- little control over basic conventions.
- many end-of-sentence punctuation errors; internal punctuation contains frequent errors.
- spelling errors that frequently distract the reader; misspelling of common words often occurs.
- paragraphs that often run together or begin in ineffective places.
- capitalization that is inconsistent or often incorrect.
- errors in grammar and usage that interfere with readability and meaning.
- substantial need for editing.

1

Numerous errors in usage, spelling, capitalization, and punctuation repeatedly distract the reader and make the text difficult to read. In fact, the severity and frequency of errors are so overwhelming that the reader finds it difficult to focus on the message and must reread for meaning. The writing is characterized by

- very limited skill in using conventions.
- basic punctuation (including end-of-sentence punctuation) that tends to be omitted, haphazard, or incorrect.
- frequent spelling errors that significantly impair readability.
- paragraph breaks that may be highly irregular or so frequent (every sentence) that they bear no relation to the organization of the text.
- capitalization that appears to be random.
- a need for extensive editing.

Arizona Department of Education 38 of 41 November 18, 2005

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AIMS Reference Sheet

PLANE FIGURES: PERIMETERS AND AREAS

Name	Notation	Perimeter (P) Circumference (C)	Area (A)
Triangle	a, b, c = sides h = height	P = a + b + c	$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$
Rectangle	b = base h = height	P = 2(h+b)	A = bh
Circle	r = radius d = diameter	$C = \pi d$ or $C = 2\pi r$	$A = \pi r^2$
Parallelogram	a, b = sides h = height	P = 2(a+b)	A = bh
Trapezoid	a, b, c, d = sides $B_1 = long base$ $B_2 = short base$ h = height	P = a + b + c + d	$A = \frac{(B_1 + B_2)h}{2}$
			Use 3.14 or $\frac{22}{7}$ for π

GEOMETRIC SOLIDS: VOLUMES

Name	Notation	Volume (V)
Rectangular Prism	l = length w = width h = height	V = lwh
Rectangular Pyramid	B = area of the base $h = $ height	$V = \frac{1}{3}Bh$ or $V = \frac{Bh}{3}$
Right Cylinder	r = radius h = height	$V = \pi r^2 h$
Right Cone	r = radius h = height	$V = \frac{1}{3}\pi r^2 h \text{ or } V = \frac{\pi r^2 h}{3}$
Sphere	r = radius	$V = \frac{4}{3}\pi r^3$

GEOMETRIC SOLIDS: SURFACE AREAS

Name	Notation	Surface Area (SA)
Rectangular Prism	l = length w = width h = height	SA = 2lw + 2lh + 2wh
Right Cylinder	r = radius h = height	$SA = 2(\pi r^2) + 2\pi rh$

Test-Taking Strategies

A REVIEW

- **Be physically prepared**. Get plenty of rest the night before. On the day of the test, eat a healthy breakfast.
- **Be mentally prepared.** Try to relax and do your best. View the test as an opportunity to truly show what you know and are able to do.
- **Listen to directions** as the teacher explains them. **Ask** about any directions you do not understand.
- Read the directions carefully.
- Look for key words that will help you identify what the question is asking you to do.
- Take your time and work at your own pace. AIMS is not a timed test, but you do want to use your time well.
- Move on to the next item if you are stuck. Be sure to return to it later.
- Make educated guesses if you are unsure of an answer. First eliminate choices that are obviously incorrect, then logically select from the remaining choices.
- Take the time to review your answers when you are finished. Re-read your written responses to check that they are clear.

NOTES